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(71) Applicant *(for all designated States except US)*: **THE TRUSTEES OF COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK** [US/US]; West 116th Street and Broadway, New York, NY 10027 (US).

(72) Inventor; and

(75) Inventor/Applicant *(for US only)*: **SATO, Taka-Aki** [JP/US]; Apartment 8P, 1275 15th Street, Fort Lee, NJ 07024 (US).

(74) Agent: **WHITE, John, P.**; Cooper & Dunham LLP, 1185 Avenue of the Americas, New York, NY 10036 (US).

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(54) Title: GENE ENCODING NADE, P75^{NTR}-ASSOCIATED CELL DEATH EXECUTOR AND USES THEREOF

(57) Abstract: This invention provides an isolated nucleic molecule encoding a polypeptide capable of binding a p75^{NTR} receptor, and a purified version of said polypeptide capable of binding a p75^{NTR} receptor. This invention provides a method of producing a purified polypeptide capable of binding a p75^{NTR} receptor. This invention provides an antisense oligonucleotide having a nucleic acid sequence capable of specifically hybridizing to an mRNA molecule encoding the above described polypeptide. This invention provides a method producing a polypeptide capable of binding p75^{NT} receptor into a suitable vector. This invention provides a method of inducing apoptosis, a method of determinig physiological effects, a method for identifying an apoptosis inducing or inhibiting compound, a method for screening cDNA libraries of said polypeptide, a method to induce caspase-2 and caspase-3 activity to cleave poly (ADP-ribose) polymerase and fragment nuclear DNA in a cell, a method to inhibit NF-kB activation in a cell, a method to detect a neurodegenerative disease, a method of producing the isolated human HGR74 protein into a suitable vector, a pharmaceutical composition comprising a purified polypeptide capable of binding a p75^{NTR} receptor and a phamaceutically acceptable carrier and a method of identifying a compound which is an apoptosis inhibitor.

AMENDED CLAIMS
[received by the International Bureau on 2 February 2001 (02.02.01);
original claims 12.15.32 and 33 amended; remaining claims unchanged (2 pages)]

of binding $p75^{NTR}$ receptor set forth in Figure 1G-1 (SEQ ID NO: 55).

13. The isolated nucleic acid molecule of claim 3, wherein the nucleic acid molecule encodes a polypeptide capable of binding $p75^{NTR}$ receptor.

14. The isolated nucleic acid molecule of claim 9 wherein the polypeptide capable of binding $p75^{NTR}$ receptor is mouse, rat or human protein.

15. The isolated nucleic acid of claim 3 which comprises the nucleic acid sequence set forth in Figure 1G-1 (SEQ ID NO: 55).

16. A host cell comprising the vector comprising the nucleic acid molecule of claim 1.

17. The host cell of claim 16, wherein the cell is selected from a group consisting of a bacterial cell, a plant cell, an insect cell, and a mammalian cell.

18. A method of producing a polypeptide capable of binding $p75^{NTR}$ receptor which comprises growing the host cells of claim 17 under suitable conditions permitting production of the polypeptide.

19. The method of claim 18 further comprising recovering the produced polypeptide.

20. An isolated nucleic acid molecule of at least 15 contiguous nucleotides capable of specifically hybridizing with a unique sequence included within the sequence of the nucleic acid molecule of claim 1.

21. The isolated nucleic acid of claim 20 which is a DNA molecule.

claim 30 having substantially the same amino acid sequence as set forth in Figure 1G-1 (SEQ ID NO: 55).

33. The polypeptide capable of binding $p75^{NTR}$ receptor of claim 30 having the amino acid sequence as set forth in Figure 1G-1 (SEQ ID NO: 55).

34. The polypeptide capable of binding $p75^{NTR}$ receptor of claim 33 which is a vertebrate polypeptide capable of binding $p75^{NTR}$ receptor.

35. The polypeptide of claims 29-34 which comprises a neurotrophin associated cell death executor protein.

36. The polypeptide of claims 29-34 which comprises an amino acid sequence of NCLRILMGELSN.

37. The polypeptide of claim 35 which comprises an amino acid sequence of NCLRILMGELSN.

38. The vertebrate polypeptide capable of binding $p75^{NTR}$ receptor of claim 34 which is a mouse, rat, or human polypeptide capable of binding $p75^{NTR}$ receptor.

39. A monoclonal antibody directed to an epitope of a polypeptide capable of binding $p75^{NTR}$ receptor of claim 35.

40. A monoclonal antibody of claim 33 directed to a mouse, rat or human polypeptide capable of binding $p75^{NTR}$ receptor.

41. A polyclonal antibody directed to an epitope of the polypeptide capable of binding $p75^{NTR}$ receptor of claim 32.

42. A polyclonal antibody of claim 41 directed to a mouse, rat or human polypeptide capable of binding $p75^{NTR}$

STATEMENT UNDER ARTICLE 19(1)

The accompanying amendments under Article 19 to the claims have been made to include Sequence ID information which was not available at the time of filing the International Application. Applicant maintains that the replacement pages 88 and 90 are made merely to complete the application. No new matter has been added.